

## Supplemental Digital Content 4: Summary Tables

### Supplemental Digital Content 4-1: Summary Table – Timing of IBR relative to radiation – NRCSs, Continuous outcomes (Various)

Study, Year, PMID, Country	Overall RoB	Outcome	Outcome Measurement	Time Point	IBR Before Radiation, N	IBR Before Radiation, Mean (SD)	IBR After Radiation, N	IBR After Radiation, Mean (SD)	IBR Before vs. After Radiation, Adjusted MD (95% CI)	P Value
Cordeiro, 2015, 30270015, US	High	Physical WB	BREAST-Q: Physical WB (0-100)	3.3 y	84	72.5 (2.6)	22	73.4 (1.9)	NR	NS
Yoon, 2020, 32332528, US & Canada	Moderate	Physical WB	BREAST-Q: Physical WB (0-100)	2 y	80	NR	237	NR	-0.64 (-7.19, 5.90)	0.84
	Moderate	Physical WB	PROMIS: Physical function (0-100)	2 y	80	NR	237	NR	-0.04 (-2.40, 2.32)	0.97
Cordeiro, 2015, 30270015, US	High	Psychosocial WB	BREAST-Q: Psychosocial WB (0-100)	3.3 y	84	71.1 (1.4)	22	72.3 (1.2)	NR	<0.01
Yoon, 2020, 32332528, US & Canada	Moderate	Psychosocial WB	BREAST-Q: Psychosocial WB (0-100)	2 y	80	NR	237	NR	0.48 (-7.72, 8.68)	0.91
Cordeiro, 2015, 30270015, US	High	Sexual WB	BREAST-Q: Sexual WB (0-100)	3.3 y	84	54.0 (0.9)	22	55.4 (0.7)	NR	<0.01
Yoon, 2020, 32332528, US & Canada	Moderate	Sexual WB	BREAST-Q: Sexual WB (0-100)	2 y	80	NR	237	NR	-1.00 (-8.41, 6.40)	0.78
	Moderate	Sexual WB	EORTC: Sexual function	2 y	80	NR	237	NR	-1.40 (-8.58, 5.77)	0.70
Cordeiro, 2015, 30270015, US	High	Satisfaction with breast	BREAST-Q: Satisfaction with breast (0-100)	3.3 y	84	56.2 (3.3)	22	57.2 (3.1)	NR	NS
Yoon, 2020, 32332528, US & Canada	Moderate	Satisfaction with breast	BREAST-Q: Satisfaction with breast (0-100)	2 y	80	NR	237	NR	-3.89 (-11.0, 3.23)	0.28
Cordeiro, 2015, 30270015, US	High	Satisfaction with outcome	BREAST-Q: Satisfaction with outcome (0-100)	3.3 y	84	68.4 (3.8)	22	70.2 (3.0)	NR	0.02
Yoon, 2020, 32332528, US & Canada	Moderate	Pain	PROMIS: Pain interference (0-100)	2 y	80	NR	237	NR	2.86 (-1.05, 6.77)	0.14

Abbreviations: CI = confidence interval, EORTC = European Organization for Research and Treatment of Cancer, IBR = implant-based reconstruction, NR = not reported, NRCS = nonrandomized comparative study, NS = not significant, PMID = PubMed identifier, PROMIS = Patient-Reported Outcomes Measurement Information System, RoB = risk of bias, SD = standard deviation, WB = well-being, y = years.

Colors: Header rows are shaded orange. Rows for every alternate outcome are shaded blue. The colors do not add unique information.

Supplemental Digital Content 4-2. Summary Table – Timing of IBR relative to radiation – NRCSs, Categorical outcomes (Various)

Study, Year, PMID, Country	Overall RoB	Outcome	Outcome Measurement	Time Point	IBR Before Radiation (%)	IBR After Radiation (%)	Effect Size (95% CI) Before vs. After Radiation	P Value
Eriksson, 2013, 24258257, Sweden	High	Unplanned repeat surgeries for revision	NR	3.6 y	NR	NR	adjHR 0.94 (0.63, 1.40)	NR
Hirsch, 2014, 25347643, US	High	Necrosis	NR	3.1 y	NR	NR	adjOR 0.96 (0.68, 1.35)	0.94
Yoon, 2020, 32332528, US & Canada	Moderate	Infections (not explicitly implant-related)	Major (IV antibiotics)	2 y	5/46 (10.9%)	7/104 (6.7%)	NR	0.40
	Moderate	Infections (not explicitly implant-related)	Minor (oral antibiotics)	2 y	3/46 (6.5%)	7/104 (6.7%)	NR	0.96
Yoon, 2020, 32332528, US & Canada	Moderate	Wound dehiscence	NR	2 y	0/46 (0%)	5/104 (4.8%)	NR	0.32
Yoon, 2020, 32332528, US & Canada	Moderate	Seroma	NR	2 y	2/46 (4.4%)	8/104 (7.7%)	NR	0.46
Yoon, 2020, 32332528, US & Canada	Moderate	Capsular contracture	NR	2 y	1/46 (2.2%)	3/104 (2.9%)	NR	0.80

Abbreviations: adj = adjusted, CI = confidence interval, hosp. = hospitalization, HR = hazard ratio, IBR = implant-based reconstruction, IV = intravenous, NR = not reported, NRCS = nonrandomized comparative study, NS = not significant, OR = odds ratio, PMID = PubMed identifier, RoB = risk of bias, y = years.

Colors: Header rows are shaded orange. Rows for every alternate outcome are shaded blue. The colors do not add unique information.

**Supplemental Digital Content 4-3. Summary Table – Comparisons of implant materials for IBR – NRCSs, Continuous outcomes  
(General quality of life, physical well-being, psychosocial well-being, sexual well-being, satisfaction with outcome, and satisfaction with breasts)**

Study, Year, PMID	RoB	Outcome	Outcome Measurement	Time Point (y)	Silicone, N	Silicone, Mean (SD)	Saline, N	Saline, Mean (SD)	Effect Size (95% CI)	P Value
Macadam, 2010, 20009795, Canada	High	General quality of life	EORTC QLQC30 (0-100): Global health status	2.6-4.5	72	79.9 (18.1)	67	74.9 (20.9)	NR	0.13
	High	Physical WB	BREAST-Q (0-100): Physical WB	2.6-4.5	74	76.2 (14.9)	68	73.4 (16.3)	NR	0.28
	High	Psychosocial WB	BREAST-Q (0-100): Psychosocial WB	2.6-4.5	75	77.6 (18.6)	67	70.8 (18.8)	NR	0.03
	High	Sexual WB	BREAST-Q (0-100): Sexual WB	2.6-4.5	71	54.4 (19.8)	65	47.6 (20.9)	NR	0.056
	High	Satisfaction with outcome	BREAST-Q (0-100): Satisfaction with outcome	2.6-4.5	75	75.4 (17.6)	68	69.5 (22.6)	NR	0.082
	High	Satisfaction with breasts	BREAST-Q (0-100): Satisfaction with breast	2.6-4.5	75	63.8 (15.2)	67	56.9 (15.1)	NR	0.008
McCarthy, 2010, 21136577, US & Canada	High	Satisfaction with breasts	BREAST-Q (0-100): Satisfaction with breast	2.4-3.3	176	58.0 (20.3)	306	52.5 (20.4)	adjMD 4.1 (1.31*, 6.89*)	0.004

Abbreviations: adj = adjusted, CI = confidence interval, EORTC QLQC30 = European Organization for Research and Treatment of Cancer Quality of Life Questionnaire C30, IBR = implant-based reconstruction, MD = mean difference, NR = not reported, NRCS = nonrandomized comparative study, PMID = PubMed identifier, RoB = risk of bias, SD = standard deviation, WB = well-being, y = years.

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\* Calculated.

**Supplemental Digital Content 4-4. Summary Table – Comparisons of implant materials for IBR – NRCSs, Categorical outcomes (Mortality, implant failure/loss, and capsular contracture)**

Study, Year, PMID, Country	Overall RoB	Outcome	Outcome Measurement	Time Point (y)	Implant Material	n/N (%)	Effect Size (95% CI)	P Value
Le, 2005, 15743498, US	High	Mortality	Breast cancer mortality	12.4	Silicone	NR	Ref	Ref
	High	Mortality	Breast cancer mortality	12.4	Saline	NR	vs. Silicone: adjHR 1.01 (0.44, 2.34)	NR
	High	Mortality	Breast cancer mortality	12.4	Double lumen	NR	vs. Silicone: adjHR 1.49 (0.83, 2.70)	NR
	High	Mortality	Non-breast cancer mortality	12.4	Silicone	NR	Ref	Ref
	High	Mortality	Non-breast cancer mortality	12.4	Saline	NR	vs. Silicone: adjHR 1.75 (0.29, 10.39)	NR
	High	Mortality	Non-breast cancer mortality	12.4	Double lumen	NR	vs. Silicone: adjHR 3.13 (0.91, 10.78)	NR
Cordeiro, 2015a, 25742523, US	High	Implant failure/loss	TE and implant loss	3.3	Silicone	NR/15 9	adjOR 0.61 (0.36, 1.07)	NS
	High	Implant failure/loss	TE and implant loss	3.3	Saline	NR/12 9	Ref	Ref
Antony, 2014, 24135689, US	High	Capsular contracture	Baker Grade III or IV	3-5	Silicone	NR/17 9	Ref	Ref
	High	Capsular contracture	Baker Grade III or IV	3-5	Saline	NR/16 6	NR	NS

Abbreviations: adj = adjusted, CI = confidence interval, IBR = implant-based reconstruction, HR = hazard ratio, NR = not reported, NRCS = nonrandomized comparative study, NS = not significant, OR = odds ratio, PMID = PubMed identifier, Ref = reference group, RoB = risk of bias, y = years.

Colors: Header rows are shaded orange. Rows for every alternate outcome are shaded blue. The colors do not add unique information.

Supplemental Digital Content 4-5. Summary Table – Comparisons of anatomic planes of implant placement for IBR – Continuous outcomes (Various)

Study, Year, PMID, Country	Design	RoB	Outcome	Outcome Measurement	Time Point	Arm	N	Mean (SD)	Effect Size (95% CI)	P Value
Lee, 2021b, 33691448, South Korea	RCT	Moderate	Physical WB	SF-36 (0–100): PCS	6 mo	Prepectoral	20	45.2 (7.1)	Ref	Ref
	RCT	Moderate	Physical WB	SF-36 (0–100): PCS	6 mo	Partial Submuscular	14	45.2 (7.1)	MD 0.0 (-5.0, 5.0)	0.689
Cattelani, 2018, 29275104, Italy	NRCS	High	Physical WB	Constant Murley (0–100): Upper limb	7 d	Prepectoral	39	65.7 (9.3)	NR	<0.001
	NRCS	High	Physical WB	Constant Murley (0–100): Upper limb	7 d	Total Submuscular	45	52.4 (12.2)	Ref	Ref
	NRCS	High	Physical WB	DASH (0-100)	1 y	Prepectoral	39	9.9 (17.9)	NR	<0.001
	NRCS	High	Physical WB	DASH (0-100)	1 y	Total Submuscular	45	29.2 (16.9)	Ref	Ref
Lee, 2021b, 33691448, South Korea	RCT	Moderate	Psychosocial WB	SF-36 (0–100): MCS	6 mo	Prepectoral	20	40.5 (10.5)	MD 0.0 (-7.5, 7.5)	0.90
	RCT	Moderate	Psychosocial WB	SF-36 (0–100): MCS	6 mo	Partial Submuscular	14	40.5 (10.5)	Ref	Ref
	RCT	Moderate	Psychosocial WB	HADS: Anxiety (0-21)	6 mo	Prepectoral	20	6.3 (3.3)	MD 1.3 (-0.9, 3.5)	0.24
	RCT	Moderate	Psychosocial WB	HADS: Anxiety (0-21)	6 mo	Partial Submuscular	14	5.0 (2.9)	Ref	Ref
	RCT	Moderate	Psychosocial WB	HADS: Depression (0-21)	6 mo	Prepectoral	20	7.5 (7.4)	MD 1.2 (-3.2, 5.6)	0.58
	RCT	Moderate	Psychosocial WB	HADS: Depression (0-21)	6 mo	Partial Submuscular	14	6.3 (3.8)	Ref	Ref
Cattelani, 2018, 29275104, Italy	NRCS	High	Psychosocial WB	Return to usual work	NR	Prepectoral	39	34.6 d (21)	NR	<0.001
	NRCS	High	Psychosocial WB	Return to usual work	NR	Total Submuscular	45	57.3 d (37.8)	Ref	Ref
Cattelani, 2018, 29275104, Italy	NRCS	High	Satisfaction with breasts	BREAST-Q (0-100): Satisfaction with breast	1 y	Prepectoral	39	92.2 (9.0)	NR	<0.001
	NRCS	High	Satisfaction with breasts	BREAST-Q (0-100): Satisfaction with breast	1 y	Total Submuscular	45	76.1 (14.6)	Ref	Ref
Avila, 2020, 33234947, US	NRCS	High	Pain	VAS (0-10)	NR	Prepectoral	73	3.94 (0.83)	NR	NS
	NRCS	High	Pain	VAS (0-10)	NR	Total Submuscular	73	5.25 (0.81)	Ref	Ref
Cattelani, 2018, 29275104, Italy	NRCS	High	Pain	BPI-SF (0-100)	7 d	Prepectoral	39	8.2 (15.4)	NR	<0.001
	NRCS	High	Pain	BPI-SF (0-100)	7 d	Total Submuscular	45	22.0 (18.6)	Ref	Ref
Kim, 2020, 33066236, South Korea	NRCS	Moderate	Pain	VAS (0-10)	7 d	Prepectoral	53	1.08 (1.19)	adjMD -0.12 (NR)	0.12
	NRCS	Moderate	Pain	VAS (0-10)	7 d	Partial Submuscular	114	0.80 (1.07)	Ref	Ref

Study, Year, PMID, Country	Design	RoB	Outcome	Outcome Measurement	Time Point	Arm	N	Mean (SD)	Effect Size (95% CI)	P Value
Avila, 2020, 33234947, US	NRCS	High	Analgesic use	Oral morphine equivalents	NR	Prepectoral	73	17.4 mg (45.1)	Ref	Ref
	NRCS	High	Analgesic use	Oral morphine equivalents	NR	Total Submuscular	73	63.0 mg (44.9)	NR	0.03

Abbreviations: adj = adjusted, BPI-SF = Brief Pain Inventory Short Form, CI = confidence interval, d = days, DASH = Disabilities of the Arm, Shoulder, and Hand, HADS = Hospital Anxiety and Depression Scale, IBR = implant-based reconstruction, MCS = Mental Component Summary, NR = not reported, NRCS = nonrandomized comparative study, PCS = Physical Component Summary, PMID = PubMed identifier, Ref = reference, RoB = risk of bias, SD = standard deviation, SF = Short Form, WB = well-being, y = years.

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#### Supplemental Digital Content 4-6. Summary Table – Comparisons of anatomic planes of implant placement for IBR – Categorical outcomes (Various)

Study, Year, PMID, Country	Design	Overall RoB	Outcome	Outcome Measurement	Time Point	Arm	n/N (%)	Effect Size (95% CI)	P Value
Avila, 2020, 33234947, US	NRCS	High	Unplanned repeat surgeries for revision	NR	1 mo	Prepectoral	8/203 (3.94)	Ref	Ref
	NRCS	High	Unplanned repeat surgeries for revision	NR	1 mo	Total submuscular	17/202 (8.42)	NR	NS
Nealon, 2020a, 32032345, US	NRCS	High	Necrosis	Skin necrosis	1.7-2.4 y	Prepectoral	5/114 (4.4)	Ref	Ref
	NRCS	High	Necrosis	Skin necrosis	1.7-2.4 y	Total submuscular	6/142 (4.2)	adjOR 1.01 (0.74, 5.95)	0.77
Kraenzlin, 2021, 32568752, US	NRCS	High	Infections (not explicitly implant-related)	NR	NR	Prepectoral	34/169 (11.0)	Ref	Ref
	NRCS	High	Infections (not explicitly implant-related)	NR	NR	Total submuscular	34/117 (17.4)	NR	0.21
Nealon, 2020a, 32032345, US	NRCS	High	Infections (not explicitly implant-related)	NR	1.7-2.4 y	Prepectoral	2/114 (1.8)	Ref	Ref
	NRCS	High	Infections (not explicitly implant-related)	NR	1.7-2.4 y	Total submuscular	6/142 (4.2)	adjOR 0.31 (<0.01, 8.65)	0.52
Nealon, 2020a, 32032345, US	NRCS	High	Need for explant surgery	NR	1.7-2.4 y	Prepectoral	4/114 (3.5)	Ref	Ref
	NRCS	High	Need for explant surgery	NR	1.7-2.4 y	Total submuscular	7/142 (4.9)	adjOR 1.01 (0.07, 14.1)	0.99
Lee, 2021b, 33691448, South Korea	RCT	Mod erate	Capsular contracture	NR	6 mo	Prepectoral	1/20 (5.0)	Ref	Ref
	RCT	Mod erate	Capsular contracture	NR	6 mo	Partial submuscular	0/14 (0)	Not calculable	-
Nealon, 2020a, 32032345, US	NRCS	High	Capsular contracture	NR	1.7-2.4 y	Prepectoral	2/114 (1.8)	Ref	Ref
	NRCS	High	Capsular contracture	NR	1.7-2.4 y	Total submuscular	12/142 (8.5)	adjOR 0.30 (0.03, 1.55)	0.16

Study, Year, PMID, Country	Design	Overall RoB	Outcome	Outcome Measurement	Time Point	Arm	n/N (%)	Effect Size (95% CI)	P Value
Lee, 2021b, 33691448, South Korea	RCT	Moderate	Seroma	NR	6 mo	Prepectoral	3/20 (15.0)	Ref	Ref
	RCT	Moderate	Seroma	NR	6 mo	Partial submuscular	2/14 (14.3)	OR 1.06 (0.15, 7.34)	0.95
Nealon, 2020a, 32032345, US	NRCS	High	Seroma	NR	1.7-2.4 y	Prepectoral	10/114 (8.8)	Ref	Ref
	NRCS	High	Seroma	NR	1.7-2.4 y	Total submuscular	11/142 (7.7)	OR 1.49 (0.37, 6.11)	0.57

Abbreviations: adj = adjusted, CI = confidence interval, IBR = implant-based reconstruction, HR = hazard ratio, mo = months, NR = not reported, NRCS = nonrandomized comparative study, NS = not significant, OR = odds ratio, PMID = PubMed identifier, RoB = risk of bias, y = years.

Colors: Header rows are shaded orange. Rows for every alternate outcome are shaded blue. The colors do not add unique information.

Supplemental Digital Content 4-7. Summary Table – Use versus nonuse of human ADMs during IBR – Continuous outcomes (Physical well-being, psychosocial well-being, sexual well-being, and satisfaction with breasts)

Study, Year, PMID, Country	Outcome	Outcome Measurement	Design	Overall RoB	Time Point	Use of ADM, N	Use of ADM, Mean (SD)	Nonuse of ADM, N	Nonuse of ADM, Mean (SD)	Effect Size (95% CI)	P Value
McCarthy, 2012, 23096987, US	Physical WB	BREAST-Q (0-100): Chest and upper body	RCT	Moderate	Expansion	36	68.6 (10.6)	33	69.3 (7.9)	NMD 0.60 (-4.87, 6.07)*	0.83
	Physical WB	BREAST-Q (0-100): Chest and upper body	RCT	Moderate	After expansion	36	79.7 (15.1)	33	80.5 (13.3)	NMD 0.50 (-5.93, 6.93)*	0.88
Cattelani, 2018, 29275104, Italy	Physical WB	Constant Murley Score	NRCS	High	7 d	39	65.67 (9.31)	45	52.36 (12.23)	NR	<0.001
	Physical WB	DASH score	NRCS	High	1 y	39	9.92 (17.87)	45	29.18 (16.91)	NR	<0.001
Ganesh Kumar, 2021, 33172826, US & Canada	Physical WB	BREAST-Q (0-100): Physical well-being	NRCS	Moderate	2 y	738	NR	713	NR	adjMD -0.82 (-3.01, 1.37)	NR
Cattelani, 2018, 29275104, Italy	Psychosocial WB	Return to usual work	NRCS	High	NR	39	34.56 d (21)	45	57.31 d (37.77)	NR	<0.001
Ganesh Kumar, 2021, 33172826, US & Canada	Psychosocial WB	BREAST-Q (0-100): Psychosocial WB	NRCS	Moderate	2 y	738	NR	713	NR	adjMD -0.26 (-2.97, 2.45)	NR
Ganesh Kumar, 2021, 33172826, US & Canada	Sexual WB	BREAST-Q (0-100): Sexual WB	NRCS	Moderate	2 y	738	NR	713	NR	adjMD -2.28 (-5.63, 1.06)	NR
Cattelani, 2018, 29275104, Italy	Satisfaction with breasts	BREAST-Q: Satisfaction with breast	NRCS	High	1 y	39	92.2 (9.03)	45	76.1 (14.6)	NR	<0.001
Ganesh Kumar, 2021, 33172826, US & Canada	Satisfaction with breasts	BREAST-Q: Satisfaction with breast	NRCS	Moderate	2 y	738	NR	713	NR	adjMD -1.95 (-4.96, 1.06)	NR

Abbreviations: adj = adjusted, ADM = acellular dermal matrix, CI = confidence interval, d = days, DASH = Disabilities of the Arm, Shoulder, and Hand, h = hours, IBR = implant-based reconstruction, MD = mean difference, N/A = not applicable, NMD = net mean difference, NR = not reported, NRCS = nonrandomized comparative study, PMID = PubMed identifier, RCT = randomized controlled trial, RoB = risk of bias, SD = standard deviation, WB = well-being, y = years.

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Supplemental Digital Content 4-8. Summary Table – Use versus nonuse of human ADMs during IBR – Categorical outcomes not meta-analyzed (Various)

Study, Year, PMID, Country	Design	Overall RoB	Outcome	Outcome Measurement	Time Point	Subgroup	Use of ADM, n/N (%)	Nonuse of ADM, n/N (%)	Effect Size (95% CI)	P Value
Wendel, 2013, None, US	RCT	High	Mortality	Death	1 mo	All patients	0/20 (0)	0/16 (0)	No events	N/A
Ibrahim, 2013, 24165587, US	NRCS	Moderate	Unplanned repeat surgeries for revision	NR	6 mo	All patients	237/3283 (0.5)	990/15714 (0.6)	NR	0.14
Nealon, 2020b, 31605310, US	NRCS	High	Unplanned repeat surgeries for revision	NR	5.3 y	All patients	NR	NR	adjOR 0.86 (0.69, 1.08)	0.19
Sobti, 2018, 29481386, US	NRCS	High	Unplanned repeat surgeries for revision	Revision for malposition or size	5 y	All patients	47/465 breasts (10.11)	24/217 breasts (11.06)	adjOR 1.10 (0.63, 1.92)	NR
Peled, 2012, 22634688, US	NRCS	High	Unplanned repeat surgeries for complications	For wound-healing/infectious complication	2.6-3.3 y	All patients	11/100 breasts (11)	21/90 breasts (23.3)	NR	<0.05
Ibrahim, 2013, 24165587, US	NRCS	Moderate	Thromboembolic events	Deep vein thrombosis	NR	All patients	9/3283 (0.3)	35/15714 (0.2)	NR	0.47
	NRCS	Moderate	Thromboembolic events	Pulmonary embolism	NR	All patients	2/3283 (0.06)	29/15714 (0.2)	NR	0.11
Craig, 2019, 29800083, US	NRCS	Low	Wound dehiscence	NR	7 mo	All patients	35/574 breasts (6.1)	20/796 breasts (2.5)	NR	NR
	NRCS	Low	Wound dehiscence	NR	7 mo	Postop radiation	42/88 breasts (47.7)	27/113 breasts (23.9)	NR	NR
	NRCS	Low	Wound dehiscence	NR	7 mo	No postop radiation	30/486 breasts (6.2)	17/683 breasts (2.5)	adjOR 2.46 (1.23, 4.93)	NR
Ganesh Kumar, 2021, 33172826, US & Canada	NRCS	Moderate	Wound dehiscence	NR	2 y	All patients	24/738 (3.3)	5/713 (0.7)	NR	0.009
Ibrahim, 2013, 24165587, US	NRCS	Moderate	Wound dehiscence	NR	NR	All patients	15/3283 (0.5)	98/15714 (0.6)	NR	0.26
Qureshi, 2016, 27465177, US	NRCS	High	Wound dehiscence	Dehiscence without necrosis	2 y	All patients	NR/295 (NR)	NR/118 (NR)	adjOR 0.4 (NR, NR)	<0.05
Woo, 2017, 28509694, South Korea	NRCS	High	Delayed healing	Delayed wound healing or skin flap necrosis	NR	All patients	32/199 (16.1)	32/199 (16.1)	adjOR 1.41 (0.67, 2.96)	0.37

Study, Year, PMID, Country	Design	Overall RoB	Outcome	Outcome Measurement	Time Point	Subgroup	Use of ADM, n/N (%)	Nonuse of ADM, n/N (%)	Effect Size (95% CI)	P Value
Ganesh Kumar, 2021, 33172826, US & Canada	NRCS	Moderate	Implant rupture	Implant rupture, leakage, or deflation	2 y	All patients	11/738 (1.5)	7/713 (1.0)	NR	0.58
Ganesh Kumar, 2021, 33172826, US & Canada	NRCS	Moderate	Implant malposition	NR	2 y	All patients	9/738 (1.2)	4/713 (0.6)	NR	0.83
Vardanian, 2011, 22030500, US	NRCS	High	Implant malposition	NR	2.4 y	All patients	4/208 breasts (1.9)	12/129 breasts (9.3)	adjOR 0.23 (0.06, 0.78)	NR
Ganesh Kumar, 2021, 33172826, US & Canada	NRCS	Moderate	Capsular contracture	NR	2 y	All patients	14/738 (1.9)	12/713 (1.7)	NR	0.24
Nealon, 2020b, 31605310, US	NRCS	High	Capsular contracture	NR	5.3 y	All patients	NR	NR	adjOR 0.78 (0.46, 1.36)	0.38
Sobti, 2018, 29481386, US	NRCS	High	Capsular contracture	NR	5 y	All patients	21/465 breasts (4.52)	7/217 breasts (3.23)	adjOR 0.57 (0.23, 1.43)	NR
Vardanian, 2011, 22030500, US	NRCS	High	Capsular contracture	NR	2.4 y	All patients	8/208 breasts (3.8)	25/129 breasts (19.4)	adjOR 0.18 (0.08, 0.43)	NR

Abbreviations: ADM = acellular dermal matrix, CI = confidence interval, d = days, IBR = implant-based reconstruction, N/A = not applicable, NR = not reported, NRCS = nonrandomized comparative study, PMID = PubMed identifier, RoB = risk of bias.

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**Supplemental Digital Content 4-9. Summary Table – Use versus nonuse of human ADMs during IBR – Continuous outcomes (Pain and analgesic use)**

Study, Year, PMID, Country	Design	Overall RoB	Outcome	Outcome Measurement	Time Point	Use of ADM, N	Use of ADM, Mean (SD)	Nonuse of ADM, N	Nonuse of ADM, Mean (SD)	Effect Size (95% CI)	P Value
McCarthy, 2012, 23096987, US	RCT	Moderate	Pain	Visual analog scale (0-100)	24 h	36	54.6 (27.6)	33	42.8 (24.5)	NMD 6.2 (-4.9, 17.3)*	0.27
	RCT	Moderate	Pain	Visual analog scale (0-100)	Expansion phase	36	17 (15.9)	33	4.6 (8.9)	NMD 6.8 (1.1, 12.5)*	0.019
	RCT	Moderate	Pain	Visual analog scale (0-100)	After expansion	36	5.6 (11.6)	33	4.6 (8.9)	NMD -4.6 (-9.8, 0.6)*	0.081
Cattelani, 2018, 29275104, Italy	NRCS	High	Pain	BPI-SF (0-100)	7 d	39	8.23 (15.39)	45	21.96 (18.59)	NR	<0.001
McCarthy, 2012, 23096987, US	RCT	Moderate	Analgesic use	Oral codeine equivalents	24 h	36	776 (602)	32	910 (634)	MD -134 mg (-440, 172)*	0.38

Abbreviations: ADM = acellular dermal matrix, BPI-SF = Brief Pain Inventory-Short Form, CI = confidence interval, d = days, h = hours, IBR = implant-based reconstruction, MD = mean difference, mg = milligrams, NR = not reported, NRCS = nonrandomized comparative study, PMID = PubMed identifier, RCT = randomized controlled trial, RoB = risk of bias, SD = standard deviation.

Colors: Header rows are shaded orange. Rows for every alternate outcome are shaded blue. The colors do not add unique information.

\* Calculated.